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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,712	11/28/2001	Yoshio Ishii	003510-112	7908

7590 04/07/2004

Young & Thompson
Suite 200
745 South 23rd Street
Arlington, VA 22202

EXAMINER	
DUDDING, ALFRED E	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/994,712	ISHII ET AL.
	Examiner	Art Unit
	Alfred E. Dudding	2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

a. page 13, line 16, change "78" to - -72- -

b. page 15, line 11, change "68" to - -78- -.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1, 2, 3, and 20 are rejected under 35 U.S.C. 102(a) as being anticipated by Miura et al. (U.S. 6,659,584 B2).

Miura et al. disclose an image recording apparatus, Figure 1, ink jet printer, clearly seen, comprising a recording section for recording, on the basis of inputted image information, an image on a recording medium by ejecting recording droplets from an ejection opening of a recording head and adhering the droplets onto the recording medium, Figure 1, element 1 (carriage), Column 5, lines 44 - 46; a monitoring section for monitoring and determining whether or not a phenomenon which may hinder image recording has occurred, Figure 5, element 8 (photodetector for detecting ink droplets); and an adopting section for carrying out a process to overcome the phenomenon, when it is determined that said phenomenon has occurred, Column

17, claims 7 and 8. Miura et al. discloses a storage section for storing the image information, Figure 4, element 27 (RAM). Miura et al., disclose that the adopting section operates the cleaning section when it is determined that an ejection opening of the recording head has clogged, Column 15, claim 9.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 4 – 7, 12, 13, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura et al. in view of Itoyama et al. (U.S. 6,488,353 B1) and Li et al. (U.S. 6,431,679 B1).

Miura et al. teach all of the limitations of the claimed invention except for:

a. an acquiring section for acquiring original image information which represents an original image to be recorded on a recording medium,

b. an image processing section for generating the image information which represents an image to be recorded on the recording medium and for outputting said the image information to the recording section by image processing said original image information,

c. a monitoring section monitors whether at least one of failure of the acquiring section, inferior obtaining of original information by the acquiring section, and failure of image processing by the image processing section has occurred,

d. a reading section for photoelectrically reading an output image recorded on the recording medium.

e. the monitoring section monitors, based on a result of the reading performed by the reading section, whether said phenomenon has occurred,

f. a cleaning section for cleaning around an ejection opening of the recording head.

g. when hindering phenomenon has occurred, said adopting section operates an alarm to call an operator.

Itoyama et al disclose an apparatus having:

a. an acquiring section for acquiring original image information which represents an original image to be recorded on a recording medium, Figure 1, element 1 (scanner), Figure 1, element 5,

b. an image processing section for generating the image information which represents an image to be recorded on the recording medium and for outputting said the image information to the recording section by image processing said original image information, Figure 1, element 12,

c. a monitoring section monitors whether at least one of failure of the acquiring section, inferior obtaining of original information by the acquiring section, and failure of image

processing by the image processing section has occurred, and the monitoring section monitors, based on a result of the reading performed by the reading section, whether said phenomenon has occurred, Figure 9, steps S1- S12, Figure 17, steps S20 – S35,

d. a reading section for photoelectrically reading an output image recorded on the recording medium, Figure 1, element 1 (scanner),

e. a cleaning section for cleaning around an ejection opening of the recording head, Figure 1, element 15,

f. when it is determined that said hindering phenomenon has occurred, said adopting section operates an alarm to call an operator, Figure 9, element S10.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the image information acquiring, monitoring, and processing sections of Itoyama et al. in the image recording apparatus of Miura et al. in order to quickly determine what section (acquiring, monitoring, storage) has a defect and alert the operator with an alarm.

7. Claims 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura et al. in view of Itoyama et al. as applied to claim 1 above, and further in view of Li et al. (U.S. 6,431,679 B1).

The combination of Miura et al. and Itoyama et al. teach all of the limitations of the claimed invention except when it is determined that a phenomenon for inducing a decrease in an image quality of an output image has occurred, in order to eliminate a decrease in the image quality which hinders image recording, the adopting section adjusts, on the basis of results of the reading performed by the reading section, an ejection amount of recording droplets such that a decrease in the image quality of the output image is corrected.

Li et al. disclose that when it is determined that a phenomenon for inducing a decrease in an image quality of an output image has occurred, in order to eliminate a decrease in the image quality which hinders image recording, the adopting section adjusts, on the basis of results of the reading performed by the reading section, an ejection amount of recording droplets such that a decrease in the image quality of the output image is corrected, Abstract, lines 4 – 17.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of varying the ejection amount of ink droplets of Li et al. to overcome hindering phenomenon in the combined invention of Miura et al. and Itoyama et al. (image recording apparatus with acquiring, monitoring, storing, cleaning, and alarm sections) in order to correct for defects in the acquiring, storing, or recording of an image.

8. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura et al. in view of Itoyama et al. as applied to claim1 above, and further in view of Gragg et al. (U.S. 5,757,390 A).

The combination of Miura et al. and Itoyama et al. fail to teach the claimed invention of an apparatus comprising a main tank which is provided in the recording head and stores a recording solution; a supply mechanism for supplying the recording solution to the main tank; and a subtank connected to the main tank via the supply mechanism; wherein the adopting section controls the supply mechanism to supply a recording solution from the subtank to the main tank.

Gragg et al. discloses a main tank, Figure 4, element 60, recording solution (ink), element 62, a supply mechanism for supplying the recording solution to the main tank, Figure 4, element 114 (pressure actuator) and ink supply line, element 38; and a subtank connected to the main

tank via the supply mechanism, Figure 4, element 20 (ink reservoir cartridge); wherein the adopting section controls the supply mechanism to supply a recording solution from the subtank to the main tank, Figure 4, element 104 (processor), element 116 (actuator controller, element 112 (valve actuator), and Abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the ink supply system and method of Gragg et al. in the combined invention of Miura et al. and Itoyama et al. (image recording apparatus with acquiring, monitoring, storing, cleaning, and alarm sections) in order to control the ink flow as a function of ink needed to re-supply the reservoir cartridge in response to defects in the acquiring, monitoring, storing, cleaning, or alarm sections.

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miura et al. in view of Itoyama et al. as applied to claim1 above, and further in view of Beck (U.S. 5,760,795 A).

The combination off Miura et al. and Itoyama et al. fail to teach the claimed invention of an apparatus wherein when it is determined that a decrease in a vacant storage capacity of the storage section has occurred, the adopting section controls the input section to temporarily stop input of the image information.

Beck discloses an apparatus, Figure 4, element 11 (printer), wherein when it is determined that a decrease in a vacant storage capacity of the storage section has occurred, the adopting section controls the input section to temporarily stop input of the image information, Figure 1, steps S3, S5. Beck discloses that element S3 may be replaced with low-memory, Column 6, lines 60 –65.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the low storage capacity (low memory) indication of Beck in the combined invention of Miura et al. and Itoyama et al. (image recording apparatus with acquiring, monitoring, storing, cleaning, and alarm sections) in order to temporarily stop inputting of image information to prevent loss of image data and introducing possible printing artifacts.

Allowable Subject Matter

10. Claims 9- 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

A search of prior art did not cite an apparatus wherein the monitoring section monitors whether said phenomenon has occurred by one of comparing results of the reading of a plurality of output images performed by the reading section with one another and by comparing the results of the reading performed by the reading section to the image information corresponding to said output image as claimed in the limitations of claims 9 – 11.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alfred Dudding whose telephone number is (571) 272-2144. The examiner can normally be reached on Monday-Friday from 8:30 AM to 4:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, AU 2853, can be reached at (571) 272 - 2149. The fax phone number for this Group is are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703) 308-0956.

Stephen D. Meier
Primary Examiner

Alfred Dudding

AD
3/31/04